

## REMARKS

In connection with Applicants' Request for Continued Examination (RCE), Applicants respectfully request entry of the foregoing and reexamination and reconsideration of the subject matter identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.114, and in light of the remarks which follow.

Upon entry of the foregoing amendments, Claims 10-36 will remain in this application.

Claims 10, 17, 19, 21, 28, 29 and 36 have been amended to recite the definition of the blocking agent as was recited in previous versions of the claims, to delete the definition of the blocking agent as made in the previous amendment, and to recite that the composition is not crosslinkable at ambient temperature for at least 8 hours, and is physically stable as indicated by being devoid of phase separation and crystallization during storage of the coating composition. Support for these amendments is found in the specification at least on page 5, lines 19-26, page 6, lines 1-13, page 12, lines 7-33, page 2, lines 10-13 and page 3, lines 20-23. Claims 11, 22 and 30 have been amended to recite that the substituent is situated on a carbon surrounded by two nitrogens so that said sequence becomes -N(H)-C(R)=N-, wherein R is a hydrocarbon chain exhibiting from 1 to 10 carbon atoms. Support for these amendments is found in the specification at least on page 12, lines 7-12. Claims 12, 23 and 31 have been amended to recite that the hydrocarbon chain contains from 1 to 5 carbon atoms per five-membered nitrogenous aromatic heterocycle. Support for this is found in the

specification at least on page 12, lines 10-12. Claims 13, 24 and 32 have been amended to recite that R contains from 1 to 5 carbon atoms per five-membered nitrogenous aromatic heterocycle. Support for this is found on page 12, lines 10-12 and page 6, lines 3-6. Claims 14, 16, 25, 33 and 35 have been amended to have antecedent basis in the claim from which they depend. Claim 27 has been amended to have proper antecedent basis by reciting a composition claim and to recite that the equivalents is based on all of the blocking agents.

No new matter has been added in making these amendments.

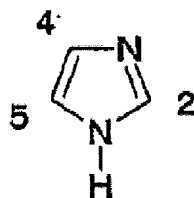
**35 U.S.C. §112 first paragraph Rejections**

Claims 10-14, 16, 17, 19, 21-25, 28-33, 35 and 36 have been rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

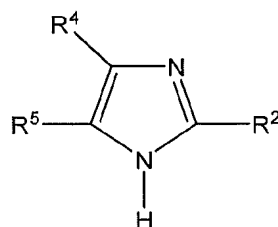
The Office Action states that:

The specification as originally filed does not contain a definition of a blocking group as defined in these claims, with the structure as drawn, and R2, R4 and R5 as defined. Although the specification discloses some aspects of the amended definition of a blocking group, such as a page 5, line 19 to page 6, line 21, the specification does not support the newly amended definition of blocking group as a whole. (page 2, third paragraph)

Applicant respectfully submits that the definition of the blocking agent, as presented in the previous version of the claims is supported by the specification. The chemical structure of a preferred embodiment is provided on page 12, lines 31-32 of the specification which states the heterocycle is an imidazole with the following structure:



The previous version of the claims references the structure as:



and provided definitions of R<sup>2</sup>, R<sup>4</sup> and R<sup>5</sup> as found on page 5, lines 19-38. Applicants have amended the claims to recite the structure was recited in previous versions of the claims and as is found in the specification on page 5, line 19 - page 6, line 21 and page 12, lines 7-33. The amendment was made in an effort to further prosecution, and was made without conceding that the specification does not provide support for the claims as recited in the previous amendment.

Claims 10-14, 16, 17, 19, 21-25, 28-33, 35 and 36 therefore comply with the written description requirement. Applicants therefore request withdrawal of these rejections under 35 U.S.C. §112, first paragraph.

**35 U.S.C. §112 second paragraph Rejections**

Claims 13, 24, 25, 27 and 32 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

a. The Office Action indicates that claims 13, 24 and 32 defined R2 as C1-C5, whereas the applicant has stated in the 7/6/2009 amendment that R2 is defined in claims 13, 24 and 32 as being C2-C5.

Claims 13, 24 and 32 have been amended to recite R contains from 1 to 5 carbon atoms. Support for this is found in the specification on page 12, lines 10-12 and also on page 6, lines 3-6.

b. The Office Action indicates in Claim 27 there is no antecedent basis for "said five-membered nitrogenous heterocycles".

Claim 10, from which claim 27 depends, has been amended to recite a blocking agent comprising a five-membered nitrogenous aromatic heterocycle. Therefore claim 10 provides antecedent basis for this term in claim 27.

c. The Office Action indicates that for claim 25, the claim is dependent on claim 21 and therefore the definitions of the R groups should not be based on claim 10.

Claim 25 has been amended to delete reference to claim 10.

Claims 13, 24, 25, 27 and 32 particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Applicants therefore request withdrawal of these rejections under 35 U.S.C. §112, second paragraph.

**35 U.S.C. §103(a) Obviousness Rejections**

Applicants note that the claims are directed to two-component (2k) polyurethane compositions, their methods of manufacture and use. As was shown in the response to the previous Office Action, "two-component" (2K) polyurethane compositions (systems) are a term of art used in the paint and coating industries. It was also shown that one of ordinary skill in the art would recognize that "two-component systems" are a term widely recognized in the art and that such "two-component systems" are distinct from a composition having two components that exist separately before being mixed. This distinction is important because several of the references are not related to (2K) compositions, but merely relate to having two components that exist separately before being mixed. Applicant notes that the claims are directed to (2K) coating compositions and that this is an element of the claims.

1. Claims 10-36 have been rejected under 35 U.S.C. §103(a) as unpatentable over JP 62-164049.

Applicants respectfully submit that these claims are not obvious over JP 62-164049 and that indeed all of the claims as amended are allowable.

To establish a *prima facie* case of obviousness, three basic criteria must be met. (MPEP 2143) First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The '049 patent discloses a planographic printing plate in which a recording layer is produced using a composition comprising a polymer having an active hydrogen that can react with a block isocyanate, an isocyanate and a photothermal substance.

The Office Action states:

Page 7 of the translation clearly teaches that a polyol may be used as the polymer that reacts with the blocked isocyanate. (page 4, line 4-6)

However, page 7, lines 9-20 merely teaches that:

"along with the block isocyanate ... a polymer having an active hydrogen that can be cured by reacting with isocyanate being generated from the block isocyanate when heating is used. The isocyanate reacts with many functional groups, and ... a polymer having at least one kind of functional group being selected from a hydroxyl group ... is preferably used. As the polymer containing a hydroxyl group a polyol prepolymer for a polyurethane resin such as polyether polyol, polyester polyol, acryl polyol, and epoxy polyol is mentioned.

The '049 patent merely teaches that the isocyanate can react with a polyol. The '049 patent teaches:

The recording layer is mixed with a dispersed solution or solution of a block isocyanate, a polymer solution containing an active hydrogen, ... " (page 10, lines 3-5)

Such a disclosure does not describe a two-component system, as required by the claims of the current application. The '049 patent does not disclose or provide any teachings regarding a (2K) coating composition, which is required by the claims of the current application. Nor does it disclose that the composition is not crosslinkable at ambient temperature for at least 8 hours, and is physically stable as indicated by being devoid of phase separation and crystallization during storage of the coating composition.

The Office Action states:

'049 teaches making a coating with HMDI, 2-(m)ethylimidazole as blocking group, and a polyol. There may be other imidazoles as blocking agent, as well as other species of blocking agent. It appears that a combination of some of the imidazole blocking agents would result in the limitation of claim 14. The coating is dried at 70 C after application. The drying time is not given, but it would have been obvious to optimize the drying time thru no more than routine experimentation. See Abstracts and pages 5, 7 and Examples of translation.

The above rejection, which is the totality of the rejection as being unpatentable over JP 62-164049, fails to indicate why the independent claims are obvious, or why the other dependent claims are obvious. Applicant respectfully submits that each of the independent claims is not obvious over JP 62-164049 for the reasons noted below. Applicant also notes that the Office Action has not provided any reasoning regarding motivation or success in modifying JP 62-164049 to obtain the instantly claimed invention and has not shown that JP 62-164049 provides each of the elements of the instant claims.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. There is no suggestion or motivation in the '049 patent to obtain a (2K) composition as required in the claims of the instant application and to provide a composition that is not crosslinkable at ambient temperature for at least 8 hours, and is physically stable as indicated by being devoid of phase separation and crystallization during storage of the coating composition. The relevant composition described in the '049 patent is a recording layer, not a coating composition, and especially not a (2K) coating composition. Therefore, there is no suggestion or motivation in the '049 Patent to modify the '049 patent to obtain the invention of the instant application.

To establish a *prima facie* case of obviousness, there must be a reasonable expectation of success. There is no reasonable expectation of success, based on the teachings in the '049 patent, that a (2K) coating composition could be produced that is not crosslinkable at ambient temperature for at least 8 hours, and is physically stable as indicated by being devoid of phase separation and crystallization during storage of the coating composition. The '049 patent is silent on a (2K) coating composition and each of the elements regarding stability. There cannot be a reasonable expectation of success in obtaining the Applicants' invention when the cited prior art does not provide any teachings regarding the required elements in the compositions and does not provide any teachings that claimed composition would have the claimed properties. The Office Action is silent on the reasonable expectations of success in obtaining the



Applicant's invention from the teachings in the '049 patent. Therefore there is no reasonable expectation of success in producing the applicants' invention based on the teachings in the cited prior art.

To establish a *prima facie* case of obviousness, the prior art reference must teach or suggest all the claim limitations. The '049 patent does not teach or suggest the use of a (2K) coating composition as required by the claims. Nor does it disclose that the composition is not crosslinkable at ambient temperature for at least 8 hours, and is physically stable as indicated by being devoid of phase separation and crystallization during storage of the coating composition. As shown above, the term "(2K)" composition is a term of art which is distinct from having two components that exist separately before being mixed, and the '049 patent does not teach a "(2K)" system as used in the art. Therefore the '049 patent does not teach or suggest all the claim limitations.

Applicants respectfully submit that the claims are not obvious over JP 62-164049 and the rejection should be withdrawn.

2. Claims 10, 11, 13-22, 24-30 and 32-36 have been rejected under 35 U.S.C. §103(a) as unpatentable over Flosbach et al. (U.S. 6,013,326).

Flosbach describes coating compositions comprising hydroxy-functional methacrylate copolymers and free or blocked isocyanates. Flosbach teaches the isocyanates can be blocked using imidazoles. Flosbach teaches:

The coating compositions according to the invention contain one or more free or blocked polyisocyanates as component D). If blocked

polyisocyanates are present, the coating compositions according to the invention are one-component (one-pack) coating compositions. If free polyisocyanates are present, they are formulated as two-component (two-pack) systems. (col. 4, lines 26-30) (Emphasis added)

The Office Action has not acknowledged or addressed this point. In addition, Flosbach teaches that one-component (one-pack) and two-component (two-pack) systems are terms of art referring to specific types of compositions. Applicants have discussed in the response to the previous Office Action how (2K) systems are distinct from (1K) systems.

The Office Action states:

'326 teaches a coating composition that comprises a hydroxy resin, and an isocyanate such as HDMI that may be blocked with 2-methylimidazole or other conventional blocking agents, and which is dried at 80-160 C for 20-40 minutes. The limitation of at least 3.5 C of claims 14, 25 and 33 is met because the imidazole has 3 C and the methyl substituent has 1 C (see Abstract; 4:33-5:49; 7:45-8:18).

The above rejection, which is the totality of the rejection as being unpatentable over Flosbach, fails to indicate why the independent claims are obvious, or why the other dependent claims are obvious. Applicant respectfully submits that each of the independent claims is not obvious over Flosbach for the reasons noted below. Applicant also notes that the Office Action has not provided any reasoning regarding motivation or success in modifying Flosbach to obtain the instantly claimed invention and has not shown that Flosbach provides each of the elements of the instant claims.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. There is no suggestion or motivation in Flosbach to obtain a (2K) composition as required in the claims of the instant application and to provide a composition that is not crosslinkable at ambient temperature for at least 8 hours, and is physically stable as indicated by being devoid of phase separation and crystallization during storage of the coating composition. The statement in Flosbach that:

If blocked polyisocyanates are present, the coating compositions according to the invention are one-component (one-pack) coating compositions.

teaches away from modifying Flosbach. A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 27 F3d 551, 553, 31 USPQ2d 1130, 1131. (Fed. Cir. 1994) One of ordinary skill in the art upon reading Flosbach would not be motivated to change from a one-component (one-pack) (1K) system to a (2K) system as required by the claims when Flosbach specifically teaches against making such a modification. There cannot be a suggestion or motivation to use a required element when the reference specifically teaches away from a claimed element. Flosbach does not provide any motivation to form a (2K) composition that is not crosslinkable at ambient temperature for at least 8 hours, and is physically stable as indicated by being devoid of phase separation and crystallization during storage of the

coating composition. Therefore, there is no suggestion or motivation in the Flosbach to modify the reference to obtain the invention of the instant application.

To establish a *prima facie* case of obviousness, there must be a reasonable expectation of success. As shown above, Flosbach teaches away from the claimed composition by the teaching recited above, which states that blocked polyisocyanates are used in one component coating compositions, while unblocked polyisocyanates are used in two component coating compositions. There is nothing in Flosbach that relates to physical stability problems with (2K) compositions related to phase separation and crystallization during storage of the coating composition. There cannot be a reasonable expectation of success in obtaining the Applicants' invention when the cited prior art specifically teaches against using a (2K) composition and is silent regarding the claimed physical stability. Therefore there is no reasonable expectation of success in producing the applicants' invention based on the teachings in the cited prior art.

To establish a *prima facie* case of obviousness, the prior art reference must teach or suggest all the claim limitations. Flosbach does not teach or suggest the use of a (2K) coating composition as required by the claims. Nor does it disclose that the composition is not crosslinkable at ambient temperature for at least 8 hours, and is physically stable as indicated by being devoid of phase separation and crystallization during storage of the coating composition. As shown above, the term (2K) coating composition is a term of art which is distinct from having two components that exist separately before being mixed, and Flosbach does not teach a (2K) coating system as

used in the art. Therefore, the prior art references, either alone or combined do not teach or suggest all the claim limitations.

Applicants respectfully submit that the claims are not obvious over Flosbach and request that the rejection be withdrawn.

3. Claims 10, 11, 14-22, 25-30 and 33-36 have been rejected under 35 U.S.C. §103(a) as unpatentable over Nasar et al., Polymer International, 48, pp 614-620, 1999.

Nasar teaches the synthesis of imidazole-blocked diisocyanates and the characterization of the blocked diisocyanates. In conducting tests to characterize the blocked diisocyanates, the isocyanates were added to various polyols. Nasar teaches the use of the compositions containing blocked isocyanates in powder coatings and heat-setting adhesives. Nasar does not teach or suggest forming a (2K) coating composition as required by the claims of the current application.

The Office Action states:

Nasar teaches reacting HMDI with 2-methylimidazole or benzimidazole to block the isocyanate group, followed by reaction with a polyol (see especially pages 615 and 620).

The limitation of at least 3.5 C of claims 14, 25 and 33 is met because the imidazole has 3 C and the methyl substituent has 1 C.

The above rejection, which is the totality of the rejection as being unpatentable over Nasar, fails to indicate why the independent claims are obvious, or why the other dependent claims are obvious. Applicant respectfully submits that each of the independent claims is not obvious over Nasar for the reasons noted below. Applicant

also notes that the Office Action has not provided any reasoning regarding motivation or success in modifying Nasar to obtain the instantly claimed invention and has not shown that Nasar provides each of the elements of the instant claims.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. There is no suggestion or motivation in Nasar to obtain a (2K) composition as required in the claims of the instant application and to provide a composition that is not crosslinkable at ambient temperature for at least 8 hours, and is physically stable as indicated by being devoid of phase separation and crystallization during storage of the coating composition. While Nasar teaches the synthesis and properties of certain imidazole-blocked diisocyanates, it is silent on its compositions being physically unstable and experiencing phase separation and crystallization during storage of the coating composition. Therefore, there is no suggestion or motivation, either in the cited references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings to obtain the invention of the instant application.

To establish a *prima facie* case of obviousness, there must be a reasonable expectation of success. There is no reasonable expectation of success based on the teachings in Nasar that a two component composition could be prepared because Nasar is silent on (2K) compositions. While Nasar teaches the use of blocked

isocyanates in powder coatings and heat-setting adhesives, these compositions are distinct from (2K) compositions, as required by the claims of the current invention. There cannot be a reasonable expectation of success in obtaining a (2K) composition that is physically stable as indicated by being devoid of phase separation and crystallization during storage of the coating composition when Nasar is silent on these elements. In addition, the Office Action is silent on the reasonable expectation of success in obtaining the Applicants invention from the teaching in Nasar. Therefore there is no reasonable expectation of success in producing the applicants' invention based on the teachings in the cited prior art.

To establish a *prima facie* case of obviousness, the prior art reference must teach or suggest all the claim limitations. Nasar does not teach or suggest the use of a (2K) coating composition as required by the claims. Nor does Nasar disclose that the composition is not crosslinkable at ambient temperature for at least 8 hours, and is physically stable as indicated by being devoid of phase separation and crystallization during storage of the coating composition. As shown above, the term (2K) coating composition is a term of art which is distinct from having two components that exist separately before being mixed, and Nasar does not teach a (2K) coating system as used in the art. Therefore, the prior art reference does not teach or suggest all the claim limitations.

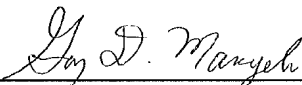
Applicants respectfully submit that the claims are not obvious over Nasar and therefore request that the rejection be withdrawn.

In view of the foregoing, it is believed that all record rejections are untenable and should be withdrawn. Further, favorable action in the form of a Notice of Allowance is believed to be next in order and is respectfully solicited.

Respectfully submitted,

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